CLAIMS

1. A method of inhibiting neuronal cell death, comprising:

administering to a subject in need thereof an effective amount of an isolated molecule comprising an antibody variable region which specifically binds to a neuronal marker (NM) protein selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion

molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of

replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6 , whereby neuronal cell death is inhibited.

2. The method of claim 1 wherein the subject has retinal cell degeneration.

3. The method of claim 1 wherein the subject has Alzheimer's disease.
4. The method of claim 1 wherein the subject has diabetic retinopathy.
5. The method of claim 1 wherein the subject has Huntington's disease.
6. The method of claim 1 wherein the subject has spinal cord injury.
7. The method of claim 1 wherein the subject has Parkinson's disease.
8. The method of claim 1 wherein the subject has glaucoma.
9. The method of claim 1 wherein the subject has age-related macular degeneration.
10. A method of preventing neuronal cell death in a mammal, comprising:

administering to the mammal a nucleic acid molecule comprising a coding sequence for a neuronal marker (NM) protein selected from the group consisting of: NM Acetylcholine receptor alpha 5; Nerve growth factor receptor, fast; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; transforming growth factor, beta receptor I; taurine/beta-alanine transporter; Rat mRNA for proteasome subunit RC10-II, complete cds.; C holinergic receptor, nicotinic, alpha polypeptide 7 (neuronal nicotinic acetycholine receptor alpha 7) (bungarotoxin alpha); 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; heterogeneous nuclear ribonucleoproteins methyltransferase-like 2 (S. cerevisiae); R.rattus mRNA for epididymal secretory glutathione peroxidase.; matrix metalloproteinase 14, membrane-inserted; cAMP response element binding protein; Solute carrier family 2 A3 (neuron glucose transporter); ATPase, Na+K+ transporting, alpha 1 polypeptide; Fyn proto-oncogene; protein kinase inhibitor, alpha; Rattus norvegicus galactosyltransferase associated kinase (GTA) mRNA, complete cds; Early growth response 1; Glutathione-S-transferase, placental enzyme pi type; neogenin; ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; Murine leukemia viral (v-raf-1) oncogene homolog 1 (3611-MSV); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); alternative splicing: see also D28754; Rat mRNA for cyclin dependent kinase 2-alpha.; Tyrosine 3-mono-oxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide; Solute carrier

family 25, member 5 (adenine nucleotid translocator 2, fibroblast isoform (ATP-ADP carrier protein)); Dopa decarboxylase (aromatic L-amino acid decarboxylase); cadherin 22; Rat thymidine kinase mRNA, 5' end.; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; R.norvegicus mRNA for Cdk-activating kinase; ADP-ribosylation factor 2; mismatch repair protein; CD24 antigen; glutamate-cysteine ligase , modifier subunit; PDZ and LIM domain 1 (elfin); casein kinase II beta subunit; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; Rat mRNA for cyclin D1, complete cds.; Proliferating cell nuclear antigen; bone morphogenetic protein 2; VGF nerve growth factor inducible; activity regulated cytoskeletal-associated protein; Fos-like antigen 1; Cyclin G1; taurine/beta-alanine transporter; Vesicle-associated membrane protein (synaptobrevin 2); unction plakoglobin; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Heat shock 27 kDa protein; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; Interleukin 6 signal transducer; Synaptophysin; latexin; Nerve growth factor receptor, fast; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; transcription factor AP-1 (AA 1-334); Rat c-jun oncogene mRNA for transcription factor AP-1.; B-cell translocation gene 1, anti-proliferativeputative anti-proliferative factor; glycoprotein hormones, alpha subunit; Adenomatosis polyposis coli; Rattus norvegicus jun-D gene, complete cds; R.rattus mRNA for heat shock protein 70.; solute carrier family 30 (zinc transporter), member 1zinc transporter; Cathepsin L; eukaryotic initiation factor 5 (eIF-5); 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1; cysteine-rich protein 3; Solute carrier family 7 member A1 (amino acid transporter cationic 1); Cytochrom P450 Lanosterol 14 alpha-demethylase; myc box dependent interacting protein 1; plectin; ATPase, Ca++ transporting, plasma membrane 1; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; cyclin-dependent kinase inhibitor 1A (P21); Annexin V; bone morphogenetic protein 2; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; Tumor necrosis factor receptor superfamily, member 1a; ezrin; Pim-1 oncogene; Fos like antigen 2transcription factor; B-cell translocation gene 2, anti-

proliferative; Rattus norvegicus RIN1 mRNA, complete cds; Rat brain glucose-transporter protein mRNA, complete cds; jun B proto-oncogene; VGF nerve growth factor inducible; Interleukin 2 receptor, beta chain; Early growth response 1; Rat mRNA for LDL-receptor; Rat mRNA for 53 kD polypeptide induced by growth factors (EGF) and oncogenes (H-ras; src; polyoma middle T); urinary plasminogen activator receptor 2urinary-type plasminogen activator receptor; Rat transformation-associated protein (34A) mRNA, complete cds; serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1; Fos-like antigen 1; and activity regulated cytoskeletal-associated protein, whereby neuronal cell death in the mammal is inhibited or prevented.

11. A method of preventing neuronal cell death in a mammal, comprising:

administering to the mammal a purified human neuronal marker (NM) protein selected from the group consisting of: NM Acetylcholine receptor alpha 5; Nerve growth factor receptor, fast; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; transforming growth factor, beta receptor I; taurine/beta-alanine transporter; Rat mRNA for proteasome subunit RC10-II, complete cds.; C holinergic receptor, nicotinic, alpha polypeptide 7 (neuronal nicotinic acetycholine receptor alpha 7) (bungarotoxin alpha); 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; heterogeneous nuclear ribonucleoproteins methyltransferase-like 2 (S. cerevisiae); R.rattus mRNA for epididymal secretory glutathione peroxidase.; matrix metalloproteinase 14, membrane-inserted; cAMP response element binding protein; Solute carrier family 2 A3 (neuron glucose transporter); ATPase, Na+K+ transporting, alpha 1 polypeptide; Fyn proto-oncogene; protein kinase inhibitor, alpha; Rattus norvegicus galactosyltransferase associated kinase (GTA) mRNA, complete cds; Early growth response 1; Glutathione-S-transferase, placental enzyme pi type; neogenin; ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; Murine leukemia viral (v-raf-1) oncogene homolog 1 (3611-MSV); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); alternative splicing: see also D28754; Rat mRNA for cyclin dependent kinase 2-alpha.; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein,

zeta polypeptide; Solute carrier family 25, member 5 (adenine nucleotid translocator 2, fibroblast isoform (ATP-ADP carrier protein)); Dopa decarboxylase (aromatic L-amino acid decarboxylase); cadherin 22; Rat thymidine kinase mRNA, 5' end.; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; R.norvegicus mRNA for Cdk-activating kinase; ADP-ribosylation factor 2; mismatch repair protein; CD24 antigen; glutamate-cysteine ligase , modifier subunit; PDZ and LIM domain 1 (elfin); casein kinase II beta subunit; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; Rat mRNA for cyclin D1, complete cds.; Proliferating cell nuclear antigen; bone morphogenetic protein 2; VGF nerve growth factor inducible; activity regulated cytoskeletal-associated protein; Fos-like antigen 1; Cyclin G1; taurine/beta-alanine transporter; Vesicle-associated membrane protein (synaptobrevin 2); unction plakoglobin; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Heat shock 27 kDa protein; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; Interleukin 6 signal transducer; Synaptophysin; latexin; Nerve growth factor receptor, fast; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; transcription factor AP-1 (AA 1-334); Rat c-jun oncogene mRNA for transcription factor AP-1.; B-cell translocation gene 1, anti-proliferativeputative anti-proliferative factor; glycoprotein hormones, alpha subunit; Adenomatosis polyposis coli; Rattus norvegicus jun-D gene, complete cds; R.rattus mRNA for heat shock protein 70.; solute carrier family 30 (zinc transporter), member 1zinc transporter; Cathepsin L; eukaryotic initiation factor 5 (eIF-5); 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1; cysteine-rich protein 3; Solute carrier family 7 member A1 (amino acid transporter cationic 1); Cytochrom P450 Lanosterol 14 alpha-demethylase; myc box dependent interacting protein 1; plectin; ATPase, Ca++ transporting, plasma membrane 1; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; cyclin-dependent kinase inhibitor 1A (P21); Annexin V; bone morphogenetic protein 2; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; Tumor necrosis factor receptor superfamily, member 1a; ezrin; Pim-1 oncogene; Fos like antigen 2transcription factor; B-cell

translocation gene 2, anti-proliferative; Rattus norvegicus RIN1 mRNA, complete cds; Rat brain glucose-transporter protein mRNA, complete cds; jun B proto-oncogene; VGF nerve growth factor inducible; Interleukin 2 receptor, beta chain; Early growth response 1; Rat mRNA for LDL-receptor; Rat mRNA for 53 kD polypeptide induced by growth factors (EGF) and oncogenes (H-ras; src; polyoma middle T); urinary plasminogen activator receptor 2urinary-type plasminogen activator receptor; Rat transformation-associated protein (34A) mRNA, complete cds; serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1; Fos-like antigen 1; and activity regulated cytoskeletal-associated protein, whereby neuronal cell death in the mammal is inhibited or prevented.

12. The method of claim 10 or 11 wherein the subject has retinal cell degeneration.
13. The method of claim 10 or 11 wherein the subject has Alzheimer's disease.
14. The method of claim 10 or 11 wherein the subject has diabetic retinopathy.
15. The method of claim 10 or 11 wherein the subject has Huntington's disease.
16. The method of claim 10 or 11 wherein the subject has spinal cord injury.
17. The method of claim 10 or 11 wherein the subject has Parkinson's disease.
18. The method of claim 10 or 11 wherein the subject has glaucoma.
19. The method of claim 10 or 11 wherein the subject has age-related macular degeneration.
20. A method of identifying regions of neuronal cell death in a patient, comprising:

administering to a patient a molecule comprising an antibody variable region which specifically binds to a neuronal marker (NM) protein selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus

norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility

group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal

nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, wherein the molecule is bound to a detectable moiety; and

detecting the detectable moiety in the patient, thereby identifying regions of neuronal cell death.

21. The method of claim 20 wherein the subject has retinal cell degeneration.
22. The method of claim 20 wherein the subject has Alzheimer's disease.
23. The method of claim 20 wherein the subject has diabetic retinopathy.
24. The method of claim 20 wherein the subject has Huntington's disease.
25. The method of claim 20 wherein the subject has spinal cord injury.
26. The method of claim 20 wherein the subject has Parkinson's disease.
27. The method of claim 20 wherein the subject has glaucoma.
28. The method of claim 20 wherein the subject has age-related macular degeneration.
29. A method of screening for neuronal cell death in a patient, comprising:

contacting a body fluid collected from the patient with a molecule comprising an antibody variable region which specifically binds to a neuronal marker (NM) protein selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl-Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA

1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding

2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, wherein detection of cross-reactive material in the body fluid with the molecule indicates neuronal cell death in the patient.

30. A method of promoting neuronal cell death in a patient, comprising:

administering to a patient in need of neuronal cell death a neuronal marker (NM) protein selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like

antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose

binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor

type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, whereby neuronal cell death in the patient is stimulated.

31. The method of claim 30 wherein the patient has a neuronal tumor.

32. A method of promoting neuronal cell death in a patient, comprising:

administering to a patient in need of neuronal cell death a nucleic acid molecule encoding a neuronal marker (NM) protein selected from the group consisting of Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform

2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease

(prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA

for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, whereby the NM protein is expressed and neuronal cell death in the patient is stimulated.

33. The method of claim 32 wherein the patient has a neuronal tumor.

34. A method of screening for neuronal cell death in a patient, comprising:

detecting a neuronal marker (NM) protein selected from the group consisting of Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4,

member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141

nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform

{alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, in a body fluid collected from the patient, wherein detection of the NM protein indicates neuronal cell death in the patient.

35. A method of screening for neuronal cell death in a patient, comprising:

detecting in a body fluid collected from the patient a nucleic acid encoding a neuronal marker (NM) protein selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor

A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin

18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine

palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, wherein detection of the NM protein indicates neuronal cell death in the patient.

36. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) genes selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl

carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic,

Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein);

Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, with a test compound;

determining expression of said one or more NM genes by hybridization of mRNA of said cells to a nucleic acid probe which is complementary to said mRNA; and

identifying a test compound as a candidate drug for treating neuronal cell death if it decreases expression of said one or more NM genes.

37. The method of claim 36 wherein the cells are retinal cells.

38. The method of claim 36 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.

39. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) proteins selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated

tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator;

BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C,

beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6, with a test compound;

determining amount of said one or more NM proteins in said cells; and

identifying a test compound as a candidate drug for treating tumors if it decreases the amount of one more NM proteins in said cells.

40. The method of claim 39 wherein the cells are retinal cells.

41. The method of claim 39 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.

42. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) proteins selected from the group consisting of: Ceruloplasmin (ferroxidase); Adenylyl cyclase 6; Insulin-like growth factor 1 receptor; vascular endothelial growth factor; Rat mRNA for sucrase isomaltase (EC 3.2.1.10).; Serotonin (5-hydroxytryptamine (5HT)) receptor, type 1B; Fos like antigen 2; phospholipase C-III; Rat phospholipase C-III mRNA, complete cds.; interleukin 18; calcium channel, voltage-dependent, alpha2/delta subunit 1; Vesicle-associated membrane protein (synaptobrevin 2); putative; Rattus norvegicus G protein-coupled receptor (GPR19) gene, partial cds.; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Max interacting protein 1; ATPase isoform 2, Na+K+ transporting, beta polypeptide 2; Secretory granule neuroendocrine, protein 1 (7B2 protein); Pim-1 oncogene; adenylate kinase 3; alpha-methylacyl-CoA racemase; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rattus norvegicus mRNA for 20-alpha-hydroxysteroid dehydrogenase (20-alpha-HSD), complete cds; telomerase protein component 1; pyruvate dehydrogenase kinase, isoenzyme 1; Solute carrier family 4, member 2, anion exchange protein 2; phospholipase A2, group IIC; syntaxin 3; Rattus norvegicus mRNA for interleukin-4 receptor (soluble form), complete cds; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); B-

cell translocation gene 2, anti-proliferative; Acyl-Coa dehydrogenase, Very long chain; Clusterin; syntaxin 4; Natriuretic peptide receptor A/Guanylate cyclase A; megakaryocyte-associated tyrosine kinase; presenilin-2; phospholipase A2, group VI; pancreatic lipase-related protein 2; phospholipase C, beta 3; Phospholipase C, gamma 1; Ephrin B1; Retinoblastoma-related gene; protein kinase C epsilon subspecies; Rat protein kinase C epsilon subspecies.; Spinocerebellar ataxia type 1; phospholipase A2, group V; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); Steroid sulfatase; protein kinase C zeta subspecies; Rat protein kinase C zeta subspecies.; Calcium channel alpha 1A; carcinoembryonic antigen-related cell adhesion molecule; amphiphysin; Rat glutathione S-transferase mRNA, complete cds; Cathepsin L; Acyl Coenzyme A dehydrogenase, long chain; ATP-binding cassette, sub-family B (MDR/TAP), member 1 (P-glycoprotein/multidrug resistance 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; glutamate receptor, ionotropic, AMPA2 (alpha 2); syntaxin 6; dipeptidylpeptidase 6; G protein-coupled receptor kinase 2, groucho gene related (Drosophila); Max; protein kinase C alpha (AA 1-672); Rat mRNA for protein kinase C alpha.; fatty acid amide hydrolase; Carnitine palmitoyltransferase 1 alpha, liver isoform; calcium channel, voltage-dependent, L type, alpha 1D subunit; BRbeta B-regulatory subunit of protein phosphatase 2A; Secretogranin II; transmembrane receptor Unc5H2; potassium inwardly-rectifying channel, subfamily J, member 12; Acetylcholine receptor beta; B-cell translocation gene 1, anti-proliferative; Lectin, galactose binding, soluble 9 (Galectin-9); Insulin receptor; synaptotagmin 5; Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; High mobility group 1; thyroid hormone receptor alpha; Rattus norvegicus cytochrome P450 4F5 (CYP4F5) mRNA, complete cds; Insulin-like growth factor 2 receptor; Rat glucagon receptor mRNA, complete cds; Arrestin, beta 1; protease (prosome, macropain) 26S subunit, ATPase 1; R.rattus mRNA for NPY-1 receptor.; kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; R.rattus RL/IF-1 mRNA.; Arrestin, beta 2; vascular endothelial growth factor; Ras-related small GTP binding protein 3A; Adenylyl cyclase 6; LIM motif-containing protein kinase 2; This sequence comes from Fig. 1b; A2 adenosine receptor [rats, striatum, mRNA, 2141 nt].; Adrenergic receptor kinase, beta 2 (G-protein-linked receptor kinase); Arrestin, beta 1; endothelial differentiation, sphingolipid G-protein-coupled receptor, 5; immediate early gene transcription factor NGFI-B; potassium inwardly-rectifying channel, subfamily J, member 12;

Rattus norvegicus calcium/calmodulin-dependent protein kinase II delta subunit mRNA, partial cds.; interleukin 18; Max interacting protein 1; prostaglandin F2 receptor negative regulator; BRbeta B-regulatory subunit of protein phosphatase 2A; Protein tyrosine phosphatase, non-receptor type substrate 1 (SHP substrate 1); Rattus norvegicus insulin-regulated membrane aminopeptidase IRAP mRNA, complete cds; Ceruloplasmin (ferroxidase); cyclin-dependent kinase 5; adrenergic receptor kinase, beta 1; MAD (mothers against decapentaplegic, Drosophila) homolog 1; CamK I; calcium/calmodulin-dependent protein kinase type I + CaM-like protein kinase; Calcium channel alpha 1A; phosphofructokinase, muscle; p32-subunit of replication protein A; Rattus norvegicus mRNA for Janus protein tyrosine kinase 1, JAK1.; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; Discoidin domain receptor (neurotrophic tyrosine kinase, receptor, type 4 (cell adhesion kinase)); Insulin-like growth factor 1 receptor; Tumor protein p53 (Li-Fraumeni syndrome); phospholipase A2, group VI; solute carrier family 2 (facilitated glucose transporter), member 5; Inhibitor of DNA binding 2, dominant negative helix-loop-helix protein; Rat mRNA for proteasome activator rPA28 subunit alpha, complete cds.; Protein tyrosine phosphatase, receptor type, A; aminopeptidase B; Rat mRNA for cyclin D1, complete cds.; syntaxin 5a; Natriuretic peptide receptor A/Guanylate cyclase A; TR4 orphan receptor; galanin receptor 2; casein kinase II, alpha 1 polypeptide; carcinoembryonic antigen-related cell adhesion molecule; protein tyrosine phosphatase, receptor type, R; Neurofibromatosis type 1; Rat glutathione S-transferase mRNA, complete cds; calcium channel, voltage-dependent, L type, alpha 1D subunit; Acetylcholine receptor alpha 3 (neuronal nicotine); mitogen activated protein kinase 3; mismatch repair protein; tissue inhibitor of metalloproteinase 2; Solute carrier family 4, member 2, anion exchange protein 2; Rat mRNA for multicatalytic proteionase (MCP) subunit L ingensin, Atp-dependent proteinase, proteasome, macropain).; Janus kinase 2 (a protein tyrosine kinase); kinase domain is 450..1295; Rattus rattus mRNA for PCTAIRE3, complete cds.; This sequence comes from Fig. 1; Na+/Cl(-)-dependent neurotransmitter transporter [rats, brain, mRNA, 3762 nt].; Set beta isoform; leukemogenesis protein; This sequence comes from Fig. 1 IIB; set=Set beta isoform {alternatively spliced} [rats, neonatal kidney, mRNA, 2026 nt].; synapsin II; Calmodulin III; subunit 8; R.rattus mRNA for glutathione transferase subunit 8.; Rattus norvegicus neuron-specific enolase (NSE) mRNA, complete cds; syntaxin 3; Tyrosine 3-

monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide; Carnitine palmitoyltransferase 1 alpha, liver isoform; Superoxide dismutase 1, soluble; phospholipase C, beta 3; Angiotensin I-converting enzyme (Dipeptidyl carboxypeptidase 1); c-fos protein (AA 1-380); Rat c-fos mRNA.; transmembrane receptor Unc5H2; GTPase Rab14; ATP-binding cassette, sub-family C (CFTR/MRP), member 1 (multiple drug resistance-associated protein); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); and dipeptidylpeptidase 6 with a test compound;

determining activity of said one or more NM proteins in said cells; and

identifying a test compound as a candidate drug for treating neuronal cell death if it decreases the activity of one more NM proteins in said cells.

43. The method of claim 42 wherein the cells are retinal cells.

44. The method of claim 42 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.

45. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) genes selected from the group consisting of Acetylcholine receptor alpha 5; Nerve growth factor receptor, fast; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; transforming growth factor, beta receptor I; taurine/beta-alanine transporter; Rat mRNA for proteasome subunit RC10-II, complete cds.; C holinergic receptor, nicotinic, alpha polypeptide 7 (neuronal nicotinic acetycholine receptor alpha 7) (bungarotoxin alpha); 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; heterogeneous nuclear ribonucleoproteins methyltransferase-like 2 (S. cerevisiae); R.rattus mRNA for epididymal secretory glutathione peroxidase.; matrix metalloproteinase 14, membrane-inserted; cAMP response element binding protein; Solute carrier family 2 A3 (neuron glucose transporter); ATPase, Na+K+ transporting, alpha 1 polypeptide; Fyn proto-oncogene; protein kinase inhibitor, alpha; Rattus norvegicus galactosyltransferase associated kinase (GTA) mRNA, complete cds; Early growth response 1; Glutathione-S-transferase, placental enzyme pi type; neogenin; ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1; 36 kDa calcium-dependent

phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; Murine leukemia viral (v-raf-1) oncogene homolog 1 (3611-MSV); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); alternative splicing: see also D28754; Rat mRNA for cyclin dependent kinase 2-alpha.; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide; Solute carrier family 25, member 5 (adenine nucleotid translocator 2, fibroblast isoform (ATP-ADP carrier protein)); Dopa decarboxylase (aromatic L-amino acid decarboxylase); cadherin 22; Rat thymidine kinase mRNA, 5' end.; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; R.norvegicus mRNA for Cdk-activating kinase; ADP-ribosylation factor 2; mismatch repair protein; CD24 antigen; glutamate-cysteine ligase , modifier subunit; PDZ and LIM domain 1 (elfin); casein kinase II beta subunit; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; Rat mRNA for cyclin D1, complete cds.; Proliferating cell nuclear antigen; bone morphogenetic protein 2; VGF nerve growth factor inducible; activity regulated cytoskeletal-associated protein; Fos-like antigen 1; Cyclin G1; taurine/beta-alanine transporter; Vesicle-associated membrane protein (synaptobrevin 2); unction plakoglobin; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Heat shock 27 kDa protein; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; Interleukin 6 signal transducer; Synaptophysin; latexin; Nerve growth factor receptor, fast; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; transcription factor AP-1 (AA 1-334); Rat c-jun oncogene mRNA for transcription factor AP-1.; B-cell translocation gene 1, anti-proliferativeputative anti-proliferative factor; glycoprotein hormones, alpha subunit; Adenomatosis polyposis coli; Rattus norvegicus jun-D gene, complete cds; R.rattus mRNA for heat shock protein 70.; solute carrier family 30 (zinc transporter), member 1zinc transporter; Cathepsin L; eukaryotic initiation factor 5 (eIF-5); 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1; cysteine-rich protein 3; Solute carrier

family 7 member A1 (amino acid transporter cationic 1); Cytochrom P450 Lanosterol 14 alpha-demethylase; myc box dependent interacting protein 1; plectin; ATPase, Ca++ transporting, plasma membrane 1; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; cyclin-dependent kinase inhibitor 1A (P21); Annexin V; bone morphogenetic protein 2; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; Tumor necrosis factor receptor superfamily, member 1a; ezrin; Pim-1 oncogene; Fos like antigen 2transcription factor; B-cell translocation gene 2, anti-proliferative; Rattus norvegicus RIN1 mRNA, complete cds; Rat brain glucose-transporter protein mRNA, complete cds; jun B proto-oncogene; VGF nerve growth factor inducible; Interleukin 2 receptor, beta chain; Early growth response 1; Rat mRNA for LDL-receptor; Rat mRNA for 53 kD polypeptide induced by growth factors (EGF) and oncogenes (H-ras; src; polyoma middle T); urinary plasminogen activator receptor 2urinary-type plasminogen activator receptor; Rat transformation-associated protein (34A) mRNA, complete cds; serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1; Fos-like antigen 1; and activity regulated cytoskeletal-associated protein, with a test compound;

determining expression of said one or more N\M genes by hybridization of mRNA of said cells to a nucleic acid probe which is complementary to said mRNA; and

identifying a test compound as a candidate drug for treating neuronal cell death if it increases expression of said one or more NM genes.

46. The method of claim 45 wherein the cells are retinal cells.

47. The method of claim 45 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.

48. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) proteins selected from the group consisting of: Acetylcholine receptor alpha 5; Nerve growth factor receptor, fast; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; transforming growth factor, beta receptor I; taurine/beta-alanine transporter; Rat mRNA for proteasome subunit RC10-II, complete cds.; C holinergic receptor, nicotinic, alpha polypeptide 7

(neuronal nicotinic acetycholine receptor alpha 7) (bungarotoxin alpha); 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; heterogeneous nuclear ribonucleoproteins methyltransferase-like 2 (S. cerevisiae); R.rattus mRNA for epididymal secretory glutathione peroxidase.; matrix metalloproteinase 14, membrane-inserted; cAMP response element binding protein; Solute carrier family 2 A3 (neuron glucose transporter); ATPase, Na+K+ transporting, alpha 1 polypeptide; Fyn proto-oncogene; protein kinase inhibitor, alpha; Rattus norvegicus galactosyltransferase associated kinase (GTA) mRNA, complete cds; Early growth response 1; Glutathione-S-transferase, placental enzyme pi type; neogenin; ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; Murine leukemia viral (v-raf-1) oncogene homolog 1 (3611-MSV); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); alternative splicing: see also D28754; Rat mRNA for cyclin dependent kinase 2-alpha.; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide; Solute carrier family 25, member 5 (adenine nucleotid translocator 2, fibroblast isoform (ATP-ADP carrier protein)); Dopa decarboxylase (aromatic L-amino acid decarboxylase); cadherin 22; Rat thymidine kinase mRNA, 5' end.; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; R.norvegicus mRNA for Cdk-activating kinase; ADP-ribosylation factor 2; mismatch repair protein; CD24 antigen; glutamate-cysteine ligase , modifier subunit; PDZ and LIM domain 1 (elfin); casein kinase II beta subunit; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; Rat mRNA for cyclin D1, complete cds.; Proliferating cell nuclear antigen; bone morphogenetic protein 2; VGF nerve growth factor inducible; activity regulated cytoskeletal-associated protein; Fos-like antigen 1; Cyclin G1; taurine/beta-alanine transporter; Vesicle-associated membrane protein (synaptobrevin 2); unction plakoglobin; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Heat shock 27 kDa protein; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; Interleukin 6 signal transducer; Synaptophysin; latexin; Nerve growth

factor receptor, fast; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; transcription factor AP-1 (AA 1-334); Rat c-jun oncogene mRNA for transcription factor AP-1.; B-cell translocation gene 1, anti-proliferativeputative anti-proliferative factor; glycoprotein hormones, alpha subunit; Adenomatosis polyposis coli; Rattus norvegicus jun-D gene, complete cds; R.rattus mRNA for heat shock protein 70.; solute carrier family 30 (zinc transporter), member 1zinc transporter; Cathepsin L; eukaryotic initiation factor 5 (eIF-5); 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1; cysteine-rich protein 3; Solute carrier family 7 member A1 (amino acid transporter cationic 1); Cytochrom P450 Lanosterol 14 alpha-demethylase; myc box dependent interacting protein 1; plectin; ATPase, Ca++ transporting, plasma membrane 1; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; cyclin-dependent kinase inhibitor 1A (P21); Annexin V; bone morphogenetic protein 2; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; Tumor necrosis factor receptor superfamily, member 1a; ezrin; Pim-1 oncogene; Fos like antigen 2transcription factor; B-cell translocation gene 2, anti-proliferative; Rattus norvegicus RIN1 mRNA, complete cds; Rat brain glucose-transporter protein mRNA, complete cds; jun B proto-oncogene; VGF nerve growth factor inducible; Interleukin 2 receptor, beta chain; Early growth response 1; Rat mRNA for LDL-receptor; Rat mRNA for 53 kD polypeptide induced by growth factors (EGF) and oncogenes (H-ras; src; polyoma middle T); urinary plasminogen activator receptor 2urinary-type plasminogen activator receptor; Rat transformation-associated protein (34A) mRNA, complete cds; serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1; Fos-like antigen 1; and activity regulated cytoskeletal-associated protein, with a test compound;

determining amount of said one or more NM proteins in said cells; and

identifying a test compound as a candidate drug for treating neuronal cell death if it increases the amount of one more NM proteins in said cells.

49. The method of claim 48 wherein the cells are retinal cells.

50. The method of claim 48 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.

51. A method to identify candidate drugs for treating neuronal cell death, comprising:

contacting cells which express one or more neuronal marker (NM) proteins selected from the group consisting of: Acetylcholine receptor alpha 5; Nerve growth factor receptor, fast; Rat insulin-like growth factor binding protein (rIGFBP-6) mRNA, complete cds.; transforming growth factor, beta receptor I; taurine/beta-alanine transporter; Rat mRNA for proteasome subunit RC10-II, complete cds.; C holinergic receptor, nicotinic, alpha polypeptide 7 (neuronal nicotinic acetycholine receptor alpha 7) (bungarotoxin alpha); 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; heterogeneous nuclear ribonucleoproteins methyltransferase-like 2 (S. cerevisiae); R.rattus mRNA for epididymal secretory glutathione peroxidase.; matrix metalloproteinase 14, membrane-inserted; cAMP response element binding protein; Solute carrier family 2 A3 (neuron glucose transporter); ATPase, Na+K+ transporting, alpha 1 polypeptide; Fyn proto-oncogene; protein kinase inhibitor, alpha; Rattus norvegicus galactosyltransferase associated kinase (GTA) mRNA, complete cds; Early growth response 1; Glutathione-S-transferase, placental enzyme pi type; neogenin; ATP synthase, H+ transporting, mitochondrial F0 complex, subunit c (subunit 9), isoform 1; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; Murine leukemia viral (v-raf-1) oncogene homolog 1 (3611-MSV); Inhibitor of DNA binding 1, helix-loop-helix protein (splice variation); alternative splicing: see also D28754; Rat mRNA for cyclin dependent kinase 2-alpha.; Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide; Solute carrier family 25, member 5 (adenine nucleotid translocator 2, fibroblast isoform (ATP-ADP carrier protein)); Dopa decarboxylase (aromatic L-amino acid decarboxylase); cadherin 22; Rat thymidine kinase mRNA, 5' end.; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; R.norvegicus mRNA for Cdk-activating kinase; ADP-ribosylation factor 2; mismatch repair protein; CD24 antigen; glutamate-cysteine ligase , modifier subunit; PDZ and LIM domain 1 (elfin); casein kinase II beta subunit; Inhibitor of DNA binding 3, dominant

negative helix-loop-helix protein; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; Rat mRNA for cyclin D1, complete cds.; Proliferating cell nuclear antigen; bone morphogenetic protein 2; VGF nerve growth factor inducible; activity regulated cytoskeletal-associated protein; Fos-like antigen 1; Cyclin G1; taurine/beta-alanine transporter; Vesicle-associated membrane protein (synaptobrevin 2); unction plakoglobin; Inhibitor of DNA binding 3, dominant negative helix-loop-helix protein; Heat shock 27 kDa protein; Solute carrier family18 (vesicular monoamine) member 1 (chromaffin granule amine transporter); mitogen-activated protein kinase 6; Interleukin 6 signal transducer; Synaptophysin; latexin; Nerve growth factor receptor, fast; 36 kDa calcium-dependent phospholipid-binding protein; This sequence comes from Fig. 1; conceptual translation differs that in published reference; calpactin 1; annexin II=36 kDa calcium-dependent phospholipid-binding protein [rats, RBL-2H3 basophilic leukemia cells, mRNA, 1362 nt].; transcription factor AP-1 (AA 1-334); Rat c-jun oncogene mRNA for transcription factor AP-1.; B-cell translocation gene 1, anti-proliferativeputative anti-proliferative factor; glycoprotein hormones, alpha subunit; Adenomatosis polyposis coli; Rattus norvegicus jun-D gene, complete cds; R.rattus mRNA for heat shock protein 70.; solute carrier family 30 (zinc transporter), member 1zinc transporter; Cathepsin L; eukaryotic initiation factor 5 (eIF-5); 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1; cysteine-rich protein 3; Solute carrier family 7 member A1 (amino acid transporter cationic 1); Cytochrom P450 Lanosterol 14 alpha-demethylase; myc box dependent interacting protein 1; plectin; ATPase, Ca++ transporting, plasma membrane 1; Rattus norvegicus Sprague-Dawley lipid-binding protein mRNA, complete cds; cyclin-dependent kinase inhibitor 1A (P21); Annexin V; bone morphogenetic protein 2; 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 4; Tumor necrosis factor receptor superfamily, member 1a; ezrin; Pim-1 oncogene; Fos like antigen 2transcription factor; B-cell translocation gene 2, anti-proliferative; Rattus norvegicus RIN1 mRNA, complete cds; Rat brain glucose-transporter protein mRNA, complete cds; jun B proto-oncogene; VGF nerve growth factor inducible; Interleukin 2 receptor, beta chain; Early growth response 1; Rat mRNA for LDL-receptor; Rat mRNA for 53 kD polypeptide induced by growth factors (EGF) and oncogenes (H-ras; src; polyoma middle T); urinary plasminogen activator receptor 2urinary-type plasminogen activator receptor; Rat transformation-associated protein (34A) mRNA, complete cds; serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type

1), member 1; Fos-like antigen 1; and activity regulated cytoskeletal-associated protein, with a test compound;

determining activity of said one or more NM proteins in said cells; and

identifying a test compound as a candidate drug for treating neuronal cell death if it increases the activity of one more NM proteins in said cells.

52. The method of claim 51 wherein the cells are retinal cells.

53. The method of claim 51 wherein the cells are recombinant host cells which are transfected with an expression construct which encodes said one or more NMs.